



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,875	01/11/2005	Mark Thomas Johnson	NL 020634	4463
24737 7590 05/25/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER CARTER III, ROBERT E	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 05/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,875

Applicant(s)

JOHNSON ET AL.

Examiner

Robert E. Carter

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/11/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 09/12/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4, 6, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent # 6,067,185) in view of Albert et al. (US Patent # 6,130,774).

As for claims 1-4 and 6,

Albert ('185) teaches:

Art Unit: 2609

An electrophoretic display device, comprising a layer of electrophoretic material, being sandwiched between a first and a second substrate (Fig. 11, #68), a pixel of said display further comprising a first (Fig. 11, #66) and a second (Fig. 11, 66') electrode for locally controlling the material of said electrophoretic layer, characterized in that said first and second electrodes are positioned on essentially the same distance from said first substrate, so that an essentially lateral field is generated in said electrophoretic layer when a signal is applied over said electrodes, in order to enable transfective operation.

Wherein said electrodes are arranged essentially parallel to each other on said first substrate. Wherein said first substrate is a transmissive front substrate. Wherein a reflector element is arranged on one of said substrates, being a back substrate, in the area between said electrodes as seen from a viewer side of said display device (Col. 11, lines 54-57).

Albert ('185) does not teach the first substrate required to sandwich the electrophoretic material.

However, related application Albert ('774) teaches an electrophoretic display (Fig. 4C) with a first substrate (Fig. 4C, # 480) and a second substrate (Fig. 4C, # 490) to sandwich the electrophoretic material and hold the electrode structures (Fig. 4C, # 495). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the electrophoretic display in Albert ('185) by adding the second substrate in Albert ('774) to sandwich the electrophoretic material and hold the electrode structures.

Art Unit: 2609

As for claim 10,

Albert ('185) in view of Albert ('774) teaches all the limitations of claim 1, and further teaches:

Wherein said layer of electrophoretic material consists of a suspension of one of absorbing or reflecting particles in a liquid (Albert ('185), Col. 5, lines 48-52).

As for claim 11,

Albert ('185) in view of Albert ('774) teaches all the limitations of claim 1, and further teaches:

Wherein said layer of electrophoretic material comprises two or more domains, containing particles having mutually different absorption spectra (Albert ('185), Col. 5, lines 52-56).

As for claim 12,

Albert ('185) in view of Albert ('774) teaches all the limitations of claim 1, and further teaches:

Wherein said layer of electrophoretic material comprises at least one domain comprising two or more types of particles having mutually different absorption spectra (Albert ('185), Col. 5, lines 52-56).

Art Unit: 2609

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent # 6,067,185) in view of Albert et al. (US Patent # 6,130,774) and further in view of Goden (US Patent # 6,738,039).

As for claim 5,

Albert ('185) in view of Albert ('774) teaches all the limitations of claim 3, however, they do not teach the limitations of claim 5.

Goden teaches:

An electrophoretic display device, comprising a layer of electrophoretic material (Fig. 3B, # 6, 7), being sandwiched between a first (Fig. 3B, # 1) and a second (Fig. 3B, # 2) substrate, a pixel of said display further comprising a first (Fig. 3B, # 3) and a second (Fig. 3B, # 4) electrode for locally controlling the material of said electrophoretic layer, characterized in that said first and second electrodes are positioned on essentially the same distance from said first substrate, so that an essentially lateral field is generated in said electrophoretic layer when a signal is applied over said electrodes, in order to enable transfective operation.

Wherein said electrodes are arranged essentially parallel to each other on said first substrate.

Goden further teaches that the first electrode is black (Col. 12, line 23) generating a reservoir that shields a part of the pixel from light, and that the second electrode is transparent (Col. 12, line 24).

Art Unit: 2609

While Goden does not teach a light shield element arranged between said first substrate and one of said electrodes, the black electrode in Goden is located in essentially the same place, the light shield being the electrode itself instead of in between the electrode and the substrate. Furthermore, the electrode and light shield claimed in claim 5 both perform the same function of generating a reservoir that shields a part of the pixel from light.

Therefore, since Goden, Albert ('185), Albert ('774), and the instant application are in the same field of endeavor, and because the black electrode in Goden functions as a light shield, at the time of the invention it would have been obvious to one of ordinary skill in the art to interchangeably use the black electrode in Goden or a separate light shield in between a transparent first electrode and the substrate. It further would have been obvious to modify the electrode assembly in Albert ('185) in view of Albert ('774) by adding a light shielding layer between the first electrode and first substrate that generates a reservoir that shields a part of the pixel from light in order to hide the electrophoretic particles from view when they are collected by the first electrode.

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent # 6,067,185) in view of Albert et al. (US Patent # 6,130,774) in further view of Okamoto et al. (US Patent # 6,281,952).

Art Unit: 2609

As for claims 7-9,

Albert ('185) in view of Albert ('774) teaches all the limitations of claim 6, however, they do not teach the limitations of claims 7, 8, and 9.

Okamoto et al. teaches:

An in-plane switching LCD display device wherein the back substrate is transmissive (Fig. 21, # 52) and the reflector is a patterned reflector (Fig. 21, # 53), in order to allow transflective operation (Col. 62, lines 40-44).

Wherein the patterned reflector is such that the pixel comprises a reflector area (Fig. 21, # 9) and a transmission area (Fig. 21, # 10), each essentially extending between a first and second electrode (Fig. 21, # 53a and 53b), and being essentially parallel with said first and second electrode (In Fig. 21, the transparent substrate 52, and the reflecting electrode structure 53 are parallel to one another along a horizontal axis).

Using transflective layers with both LCD and electrophoretic displays is well known:

(Hochstrate, US Patent # 4,196,973 Col. 4, lines 38-49), (Shulman et al. US Patent # 4,545, 648 Col. 9, lines 16-22), (Ralli, US Patent # 5,926,293 Col. 11, lines 53-61).

Therefore, since, Okamoto et al., Albert ('185), Albert ('774), and the instant application are in the same field of endeavor, and because using LCD transflectors with electrophoretic displays is well known, at the time of the invention it would have been obvious to one of ordinary skill in the art to modify the electrophoretic display device in

Art Unit: 2609

Albert ('185) in view of Albert ('774) with the transflector in Okamoto et al. in order to allow for readability in dark conditions while maintaining the energy efficiency (Albert ('185), Col. 5, line 66 – Col. 6, line 3) of a reflective electrophoretic display.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Liang et al. (US Patent # 6,751,007) discloses a transfective electrophoretic display.

Ralli (US Patent # 5,926,293) discloses a holographic transflector usable with an electrophoretic display.

Shulman et al. (US Patent # 4,545, 648) discloses a nacreous transflector usable with an electrophoretic display.

Hochstrate (US Patent # 4,196,973) discloses an improved transflector usable with an electrophoretic display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert E. Carter whose telephone number is 571-270-3006. The examiner can normally be reached on M-F.

Art Unit: 2609

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

REC



CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600